DOCUMENT RESUME

ED 247 390 CE 039 400

| | |
|---|---|
| AUTHOR | Harrison, Lin; Griggs, Martha |
| TITLE | The Role of Vocational Education in Productivity (Phase I). Final Report. |
| INSTITUTION | State Fair Community Coll., Sedalia, Mo. |
| SPONS AGENCY | Missouri State Dept. of Education, Jefferson City. Research Coordinating Unit. |
| PUB DATE | 21 Dec 83 |
| NOTE | 86p. |
| PUB TYPE | Reports - Evaluative/Feasibility (142) |
| EDRS PRICE | MF01/PC04 Plus Postage. |
| DESCRIPTORS | Behavioral Objectives; College Programs; Community Colleges; Economic Development; Educational Attitudes; *Educational Demand; Educational Needs; Education Work Relationship; Feasibility Studies; Instructional Materials; Learning Modules; *Management Development; Needs Assessment; Pilot Projects; Postsecondary Education; *Productivity; Questionnaires; Relevance (Education); *School Business Relationship; School Effectiveness; *School Role; Surveys; *Vocational Education |
| IDENTIFIERS | Missouri |

ABSTRACT

To determine the role of vocational education in enhancing private sector productivity in the Sedalia, Missouri area, the feasibility of a program to assist business and industry in productivity awareness, assessment, and improvement was evaluated. Based on data from six area business and industry representatives who agreed to complete a survey instrument, the following five major areas of interest and need were identified: knowledge of productivity awareness by management and employees, guidelines to initiate a productivity improvement program, employee acceptance, understanding of basic business concepts, and productivity measurement. To meet these needs, program planners at State Fair Community College developed a pilot program to address productivity awareness as well as planning and analysis of productivity improvement. (Appended to this report are a project brochure, a productivity planning profile, a list of survey participants, a productivity flow chart, step-by-step procedures for implementing a productivity management system, a system overview, a learning module on productivity improvement programs, a productivity and quality-of-work-life awareness inventory, and a learning module on planning and analysis.) (MN)

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# FINAL REPORT

## The Role of Vocational Education in Productivity

(Phase I)

Project No. 84-131/132-600-1(126-126) (A)

Lin Harrison, Director

Martha Griggs, Coordinator

State Fair Community College

Sedalia, MO.

December 21, 1983

Missouri Department of Education
Research Coordinating Unit
Jefferson City, Missouri 65102

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2. ABSTRACT

In an effort to determine the role of vocational education in enhancing private sector productivity, a study was conducted to determine the feasibility of establishing a program that would assist business and industry in awareness, assessment and improvement of productivity.

Area business and industry leaders were invited to a project informational meeting. From that group, a Steering Committee was selected to direct project activities.

In order to determine if common areas of interest and/or need exist in the Sedalia area, the Committee and Project Coordinator developed a survey instrument (Productivity Planning Profile) to collect primary data. Six business and/or industry leaders agreed to work with the project coordinator in completion of the instrument.

Analysis of the survey resulted in identifying five major areas of interest and/or need. These areas are: (1) knowledge of productivity awareness by management and employees, (2) guidelines to initiate a productivity improvement program, (3) employee acceptance, (4) understanding of basic business concepts, and (5) productivity measurement.

A pilot program has been designed to address productivity awareness and planning and analysis of productivity improvement. The program will be field tested at three business sites in Phase II of the project.

3. BODY

a. Statement of the Problem:

Productivity is a national problem. The productivity growth rate of the United States lags behind the rates posted by other industrial countries in the free world. National attention is being focused on company-wide productivity improvement programs. Several states (Oklahoma, Georgia, Oregon) have developed vocational education programs to address this issue. The common elements of these programs include awareness, employee communication, change in management style, employee involvement and productivity measurement. Research shows that the programs delivered are successful.

Vocational education in Missouri has a record of responding effectively to the ongoing needs of business and industry. This project focuses on determining if there is a role for vocational education in productivity improvement in the Sedalia area.

b. Objectives:

Objective 1: To determine the feasibility of establishing a program that will assist business and industry in awareness, assessment, and improvement of productivity.

Thirty-two business and industry leaders were invited to an informational meeting on the project. A project brochure was distributed. (Attachment 1.) A Steering Committee (Attachment 2.) was formed from those who expressed an interest in the project. The Steering Committee approved the survey instrument (Productivity Planning Profile) designed to collect primary data for the feasibility study and directed the Project Coordinator in completing the profile. (Attachment 3.)

Objective 2: To design a program that will assist business and industry in awareness, assessment, and improvement of productivity.

The Steering Committee and Project Coordinator analyzed the results of the profile and made the following conclusions:

(1) Five of the six companies do not have written productivity policies. Three of the six businesses surveyed do have clear definitions of productivity and quality of work life concepts. Yet, all six organizations agreed that these concepts should be given top consideration in meeting corporate objectives.

(2) Every business leader agreed that productivity and quality of work life should apply to all employees, and the responsibility and direction for productivity improvement rests with the full support of top management.

(3) All six interviewed are experiencing difficulties in measurement.

(4) All six believe productivity should be integrated into business plans, budgets, and performance appraisal systems.

(5) Productivity improvement techniques currently used by the six organizations range from employee handbooks to quality circles and gains sharing plans.

(6) The best leverage points for productivity improvement are more employee involvement and training.

(7) Common areas of interest and/or need identified were:

a. Productivity awareness

b. Start-up of a productivity improvement program

c. Basic business concepts

d. Communications

e. Productivity measurement

The Project Coordinator reviewed all commercially available productivity material obtainable during the six month period. Materials reviewed include the McGraw-Hill Management Series (30 films), 2 McGraw-Hill Multi-Media Workshop Modules, and three American Productivity Center Media-based programs. The Oklahoma Productivity Consortium materials were reviewed.

The Project Coordinator attended a four-day workshop on Managing Productivity and Quality of Work Life at the American Productivity Center, Chamber of Commerce Business Symposium, and MACJC meeting on productivity at Chrysler Corporation.

A pilot program was designed to address common areas of interest and/or need identified by the survey results.

The program was reviewed and approved by the Steering Committee.

c. Population and Sample:

Thirty-two invitations to the informational meeting were mailed to representatives of manufacturing, retail, service, and health care organizations. There were no responses from retail or health care organizations.

From the group expressing interest in the project, six organizations were selected to participate in the survey---four, manufacturing; two, service; four, union; two, non-union. (See Attachment 4 for complete listing)

d. Conclusions and Recommendations:

Research in productivity improvement procedures indicates a series of sequential procedures that should be implemented in order to establish a successful productivity management system. (See Attachment 5 ) A careful analysis of the completed surveys and in-depth interviews with top management personnel reveal that Pittsburgh-Corning Corp., Alcolac and Best Western State Fair Motor Inn would be slotted into Step One - Awareness. Temple-Callison Co. has made an initial effort to introduce productivity concepts to employees; however, more planning and analysis of procedures used is needed.

While both Al-Can and Kelsey Hayes have introduced productivity improvement programs in their organizations, both reported difficulties in employee acceptance. A possible solution to this problem is more in-depth programs in productivity awareness for employees.

A pilot program has been developed to address the issues of Productivity Awareness (Step One) and Planning and Analysis (Step Two). The program includes step-by-step procedures, an overview of numerous strategies and techniques that will contribute to improvement, case studies and audio-visual materials to enhance delivery.

Recommendations include the testing of the pilot program in at least three business sites and modify, if necessary; the development of an instrument to be administered to participants to measure results; the development of audio-visual materials (slide-tape presentation) to augment the delivery of the Awareness Program; the development of a productivity awareness program to stimulate public interest; continued development of program in Steps three through five of the proposed productivity management system.

e. Disclaimer:

"The activity which is the subject of this report was supported in whole or in part by funds from the Department of Elementary and Secondary Education, Division of Career and Adult Education. However, the opinions expressed herein do not necessarily reflect the position or policies of the Missouri Department of Elementary and Secondary Education or the Division of Career and Adult Education, and no official endorsement should be inferred."

4. ATTACHMENTS

a. Procedures:

The survey instrument designed to collect primary data was administered to top management personnel by the coordinator of the project. The coordinator met individually with representatives of each of the six companies to complete the survey. An in-depth interview after the completion of the survey resulted in more detailed information. The Steering Committee recommended this procedure because it was believed that some of the participants would like to share more information than that requested in the survey. They also thought the interview procedure could reveal unique problems experienced by each of the participants.

b. References:

American Productivity Center Workshop---Managing Productivity and Quality of Work Life.

c. Bibliography:

N/A

d. Instruments:

The survey instrument was designed to provide information on definitions of productivity, importance, responsibility, track records, and types of productivity improvement procedures currently used.

e. Glossary:

N/A

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Productivity Program

This program is designed to introduce productivity improvement and quality of work life procedures in an organization. It is divided into five major sections: (1) Awareness, (2) Planning and Analysis, (3) Assessment and Preparation, (4) Training and Implementation, and (5) Evaluation and Maintenance. Under each Major Section, there are a number of sub-sections.

Modules are developed for each major section. Presentations from one to two hours in length are prepared for each sub-section. A number of supplemental materials that can be incorporated are listed at the end of each subsection. Use of these materials will depend on the length of time for the presentation and the make-up of the audience (top management, middle management, line or staff employees).

General Overview

I. Productivity Flowchart

II. Productivity Management System---Step-by-Step procedures

III. System Overview

# PRODUCTIVITY CENTER PROJECT

STATE FAIR COMMUNITY COLLEGE
1900 Clarendon Road
Sedalia, MO 65301-6799
(816) 826-7100

PROJECT DIRECTOR:

LIN HARRISON

PROJECT COORDINATOR:

MARTHA GRIGGS

PRODUCTIVITY CENTER PROJECT

**Intent:**

The intent of the project is to provide programs and services to area business and industry that will enhance productivity. The project will focus on (1) determining the feasibility (other than skill training) of vocational education's involvement in enhancing private sector productivity. The result of the activities will be to cause increases in productivity to occur in excess of the cost of providing the service in firms where the project coordinator provides programs and services.

**Design:**

The project will be divided into two distinct six-month phases. Phase I will consist of a feasibility study and program development. If Phase I proves successful, the Phase II will be implemented. Phase II will consist of pilot testing materials and/or services.

PHASE I -- Little is known about the effectiveness of vocational education in assisting business and industry with current productivity problems. Traditionally, vocational education has played the role of providing a trained labor pool. Today's productivity problems are much more complex. It is estimated by 1985, 90 percent of U.S. companies will have some sort of productivity program. The question then becomes "Will these programs result in productivity improvement."

Long-term effectiveness will require detailed planning tailored to an organization's objectives and employees. It will require customized definitions of productivity and development of a system to measure productivity. Such requirements are rarely filled with quick-fix package programs. Instead these efforts will take time and leadership from chief executive officers who are committed to planning and people involvement.

The feasibility study is designed to (1) identify the role of vocational education, if any, in providing programs and services to enhance productivity.

PHASE II -- This phase is triggered upon the successful completion of Phase I. Assuming there is agreement that a defined role exists for vocational education in productivity programs and business and industry want these services, the question still remains "Can these services and/or programs actually increase productivity?" If so, at what cost? Phase II is designed to pilot programs and/or services that will answer these questions.

**Evaluation Procedures:**

The evaluation of the project will consist of answering three primary questions:

(1) What is the role of vocational education, if any, in providing programs and services to enhance productivity in the private sector?

(2) What types of programs and services can be provided?

(3) What is the cost-effectiveness of operating these programs and/or services?

**Steering Committee:**

This committee will approve and direct all project activities. Major areas of activity will include:

(1) Selection of five area businesses to participate in the completion of the Productivity Planning Profile.

(2) Analyze results of the profile and determine areas of common interest and/or need.

(3) Assist coordinator in designing a program to address identified areas of common interest and/or need.

## CALENDAR OF ACTIVITIES

July - December, 1983

**August**

Send area business and industry leaders invitation for an informational meeting about the project.

**September**

Informational Meeting - September 8.

Form Steering Committee

Schedule Steering Committee meeting to 1) Review objectives 2) Review and revise Productivity Planning Profile 3) Formulate methods of data collection.

Select five (5) businesses or industries who agree to complete Productivity Planning Profile.

**October**

Compile inventory of training materials available on campus.

Review other commercially-developed training packages.

Submit Project Quarterly Report

Analyze results of Productivity Planning Profile with Steering Committee.

Determine areas of common interest and/or need.

**November**

Using results of Profile analysis, design a program to address identified areas.

**December**

Review program design with Steering Committee.

Submit Final Report of Project.

ATTACHMENT 2

STEERING COMMITTEE

PRODUCTIVITY PROJECT

1. Joe Aid
   Alcolac, Inc.
   816 Randall Road
   P.O. Box 816
   Sedalia, MO 65301

2. Randy Jackson
   Alcan Cable
   P.O. Box 231
   Sedalia, MO 65301

3. Sam Corpe
   Kelsey Hayes Company
   P.O. Box 1627
   Sedalia, MO 65301

4. Bill Holton
   Pittsburgh Corning
   P.O. Box 716
   Sedalia, MO 65301

5. Robert Wolf
   Temple Callison Co.
   113 E. 3rd
   Sedalia, MO 65301

6. Fran Gilmore
   State Fair Motor Inn
   3120 S. Limit
   Sedalia, MO 65301

7. Debbie Williams
   Sedalia Economic Development
   P.O. Box 1707
   Sedalia, MO 65301

8. Steve Dust
   Septagon Industries
   3401 S. Stewart
   Sedalia, MO 65301

9. Dr. Robert Pierce, Dean
   School of Business & Economics
   Central Missouri State University
   Warrensburg, Missouri 64093

ATTACHMENT 3

## PRODUCTIVITY PLANNING PROFILE

NAME OF BUSINESS _____

CHIEF EXECUTIVE OFFICER _____

TYPE OF BUSINESS OR MAJOR PRODUCTS PRODUCED _____

_____

NUMBER OF EMPLOYEES _____

1. What is your definition of productivity and quality of work life? What is the relationship between these concepts in your organization?
2. Are productivity and quality of work life important to meeting your company's objectives?
3. To whom does productivity and quality of work life apply in your organization?
4. Who is responsible for productivity improvement? How clearly is that responsibility spelled out?
5. What is your productivity track record?
6. What kind and how much top management direction should be provided?
7. Can/should productivity be integrated into your business plan, budget and performance appraisal system? Why?
8. What are you now doing to improve productivity in your organization?
9. What are your best leverage points for improvement?
10. Who can best address these issues?

ATTACHMENT 4

SURVEY PARTICIPANTS

1. Alcan Cable (Union)
   (Alumninum electrical conductor manufacturer)

2. Alcolac, Inc. (Union)
   (Chemical Manufacturer

3. Best Western State Fair Motor Inn (non-Union)
   (Motel/restaurant/lounge)

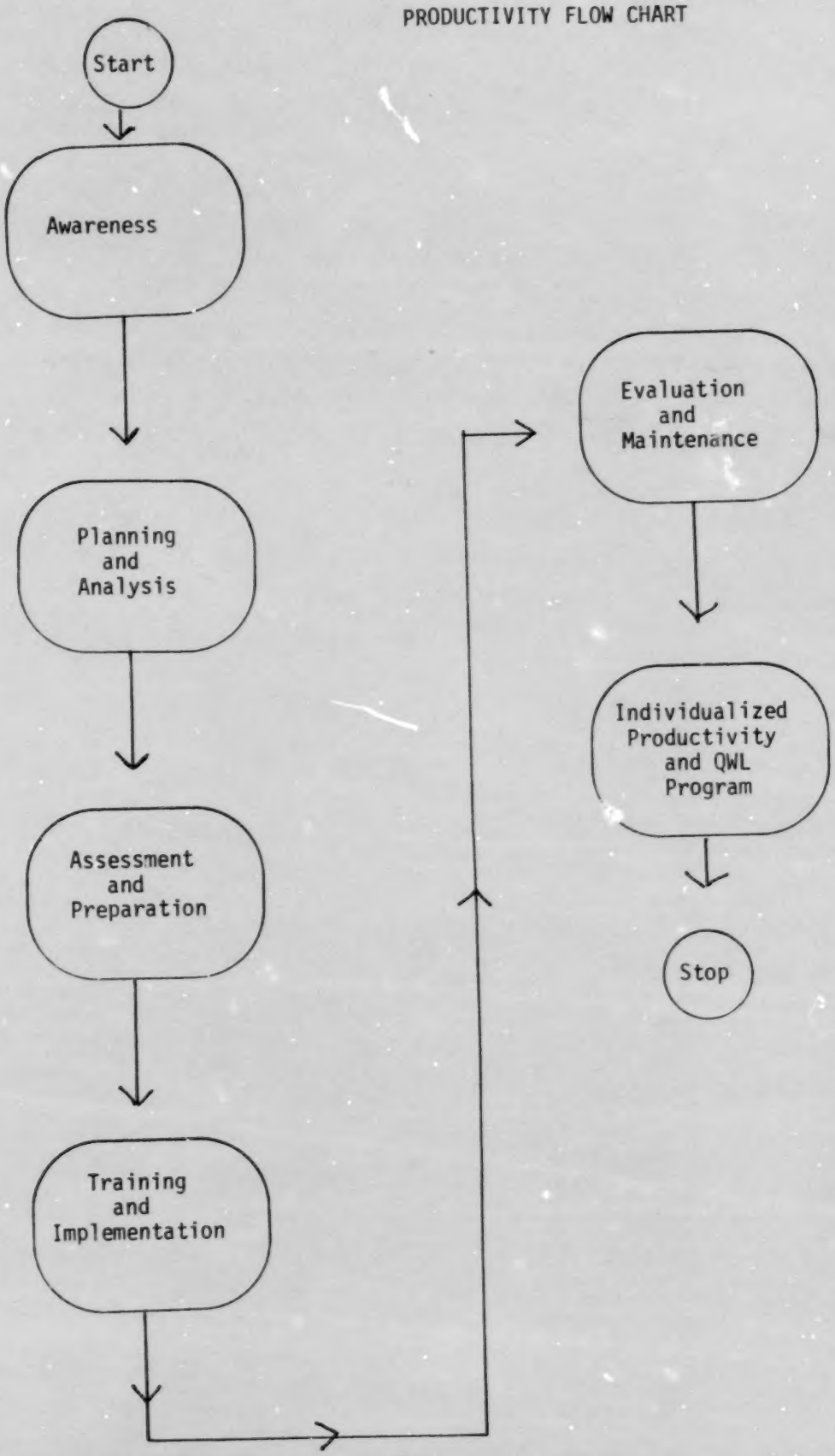
4. Kelsey Hayes (non-Union)
   (automobile wheel manufacturer)

5. Pittsburgh-Corning Corp. (Union)
   (insulation manufacturer)

6. Temple-Callison Co. (Union)
   (construction)

ATTACHMENT 5

PRODUCTIVITY FLOW CHART



PRODUCTIVITY MANAGEMENT SYSTEM

Step-by-Step Procedures

1. Awareness
   - 1.1 Understanding of importance
   - 1.2 Commitment of top management and employees
   - 1.3 Review internal and external sources of information
2. Planning and Analysis
   - 2.1 Define and relate productivity
   - 2.2 Establish common framework for management
   - 2.3 Consider available approaches/natural barriers
   - 2.4 Review productivity track record and identify leverage points
3. Assessment and Preparation
   - 3.1 Determine relative improvement potential
   - 3.2 Determine organization and structure
   - 3.3 Establish productivity goals
   - 3.4 Select and plan approach
4. Training and Implementation
   - 4.1 Train managers and employees to provide role understanding, knowledge and skills
   - 4.2 Enlist participation and support
   - 4.3 Communicate effectively
   - 4.4 Initiate plan

5. Evaluation and Maintenance

5.1 Document progress by measuring results and analyzing finds

5.2 Report results and recommendations to top management

5.3 Modify failing or marginal efforts

5.4 Diffuse successful efforts

## SYSTEM OVERVIEW

I. Productivity improvement may be viewed as a continuous, iterative, orderly process.

II. The major phases of the process are:

A. Awareness

B. Planning and Analysis

C. Assessment and Preparation

D. Training and Implementation

E. Evaluation and Maintenance

III. These major phases are present in most successful improvement efforts, although their sequence may vary.

IV. Awareness

A. General identification and communications of internal productivity issues are vital:

1. To raise the level of awareness and commitment of top management/decision makers

2. To insure that the organization understands the importance of productivity

3. To raise the level of awareness and commitment among employees

B. Review sources of valuable information or issues related to productivity within the organization:

1. Current financial report

2. Internal audit reports

3. Organizational studies

4. Operational studies

C. Review sources of information external to your organization:

1. Trade publications

2. Economic reports

3. Seminars/workshops

4. Consultants

D. Identify external forces which impact your organization:

1. Economy

2. Competition

3. What others are doing

4. Regulations

V. Planning and Analysis

A. Determine how productivity improvement is going to fit within your current business strategy:

1. Define productivity in your own organization's terms

2. Relate productivity to your organization's goals and objectives

B. Establish productivity as an explicit management responsibility:

1. Establish a common framework for management and communications

2. Integrate productivity and quality of work life into the management process

C. Determine the potential value to your organization of the different available approaches to productivity improvement:

1. Consider the prevailing management style

2. Consider the natural barriers that your organization might present in one approach as opposed to another

D. Review your organization's track record in productivity and quality of work life:

1. What has been done in the past?

2. What are you doing now?

E. Identify leverage points for improvement

F. Involve the right people early

G. Keep the long-term perspective

VI. Assessment and Preparation

A. Determine relative improvement potential by:

1. Assessing operational opportunities
2. Assessing leadership and support

B. Determine organization and structure:

1. Function manager versus productivity manager
2. Organizational structure

C. Establish productivity goals

D. Select and plan approach for your organization:

1. Determine support systems
2. Assess skills required
3. Determine barriers
4. Establish rewards and recognition systems
5. Assess employee-management relations
6. Secure management commitment
7. Design measurement system
8. Design performance feedback system

VII. Training and Implementation

A. Train managers and employees to provide them with:

1. An understanding of their roles
2. New knowledge
3. New skills

B. Implement the productivity improvement effort through:

1. Enlisting the participation and support of others
2. Communicating effectively what you want to do
3. Initiating and operating the effort

VIII. Evaluation and Maintenance

A. Document the progress of your productivity improvement efforts:

1. Measure results

2. Analyze findings

a. What worked?
b. What failed?
c. Why?

B. Report results and recommendations to top managers and decision makers

C. Modify failing or marginal efforts

D. Diffuse successful efforts:

1. Publicize results

2. Build on successes

MODULE I - AWARENESS

Subsection 1.1 - Understanding of Importance

I. Background Information on Productivity

The American standard of living has continually advanced since the early years of this country's existence. This advancement has been due largely to the strides made in increasing productivity throughout all sectors of the country's economy. Those advances resulted in vast improvements in the quality of our life at work and at leisure. So strong have the economic advances been, that we have been able to overcome the effects of recessions, depressions, wars, and social revolutions.

Unfortunately, the concept of productivity, even the word itself, is grossly misunderstood by most people. There are many who look upon productivity improvements as a masquerade for increasing production at labor's expense. The simplest definition of productivity is the ratio of output to input. Dr. C. Jackson Grayson, Chairman of the American Productivity Center, defines productivity in simple terms:

> "A process of getting more out of what you put in. It's doing better with what you have."

This definition keys on the fact that productivity is a concept which encompasses and benefits from participation of the entire organization. Furthermore, it recognizes that some form of process must act upon inputs in order to generate the system's outputs.

Although the quality of work life concept is not included in the definition, it is difficult to separate QWL and productivity into a cause/effect relationship similar to the "chicken and the egg" paradox. This

entwined relationship can best be exemplified by paraphrasing the General Motors Quality of Work Life philosophy as presented in their new employee handbook:

> Working should provide the opportunity for making full use of your knowledge and abilities. It should provide the opportunity to increase responsibilities and rewards and facilitate realizing high levels of personal satisfaction of your accomplishments. The work environment that provides these ingredients is in the best interest of both the employee and the employer.

In reducing this definition to practice, a number of factors that contribute to improved quality of work life must be considered:

1. Involve the worker in the decision-making process as it relates to his job function and his impact on product quality.
2. Provide a channel for two-way communication of problems, concerns, and suggestions.
3. Recognize the individuals' importance to the success of the enterprise.
4. Recognize that no one knows the job better than the person doing it.
5. Provide a means for individuals to improve their job performance and receive appropriate recognition.

Interest in productivity is a direct result of the seriousness of the productivity growth slowdown in the U.S. during the past fifteen years and the impact this slowdown has made upon our national economy. The results are rampant inflation and interest rates at levels previously unheard of in the United States and a sharp decline in the pace of capital investment for normal technological improvement. We have lost previously secure markets for manufactured goods, with resulting unemployment, an increasing number of closed-down factories and a reduced standard of living.

The national productivity slowdown has been accelerating rapidly during the past five years, with a decline in growth rate superseded by an absolute drop in labor productivity for the private business economy in the last three calendar years.

While the U.S. economy has been suffering this severe decline in productivity growth, other major industrialized nations have been more successful in achieving and retaining strong growth, despite the 1974-75 recession and other maleficent impacts of the energy crisis since 1973. Japan, France, West Germany, Italy, and Belgium have demonstrated particularly strong productivity growth, and this has shown up directly in their enlarged portions of the international market for manufactured goods. Manufacturing labor productivity growth rates for these nations during the past two decades or more have doubled or even tripled the pace of the U.S. and the United Kingdom and (more recently) Canada.

| | Average Annual Productivity Growth Rates (% per year) | | | | | |
|---|---|---|---|---|---|---|
| | 60-73 | 73-78 | 78-81 | 50-67 | 67-73 | 73-79 |
| | Real GDP per Hour Worked | | | Output per Hour, Manufacturing | | |
| U.S. | 2.6 | 1.4 | -0.3 | 2.5 | 3.6 | 1.5 |
| U.K. | 3.7 | 2.5 | 0.5 | 2.8 | 4.3 | 0.5 |
| Canada | 3.0 | 1.3 | -1.3 | 4.0 | 5.1 | 2.2 |
| Italy | 6.9 | 4.2 | 2.0 | 6.4 | 7.2 | 3.7 |
| Belgium | 5.4 | 4.2 | 1.5 | 5.2[1] | 9.0 | 6.0 |
| France | 5.6 | 3.8 | 2.7 | 5.0 | 6.1 | 4.8 |
| W. Germany | 5.4 | 4.3 | 2.4 | 6.0 | 5.3 | 5.3 |
| Japan | 9.8 | 4.0 | 3.7 | 9.5 | 11.0 | 6.9 |

1/ 60-67 only

Average Annual Total Factor Productivity Growth Rate

| | Total Private Business | | Manufacturing Sector | |
|---|---|---|---|---|
| | 1960-73 | 1973-78 | 1960-73 | 1973-78 |
| U.S. | 3.1 | 1.4 | 2.9 | 2.2 |
| U.K. | 3.8 | 2.0 | 4.1 | 0.6 |
| Canada | 4.2 | 1.5 | 4.5 | 2.8 |
| Italy | 7.8 | 0.9 | 6.9 | 3.3 |
| France | 5.9 | 4.0 | 6.0 | 5.1 |
| W. Germany | 5.8 | 4.2 | 5.5 | 5.0 |
| Japan | 9.9 | 3.6 | 10.3 | 4.2 |

As a result, the once-huge U.S. leadership in national productivity levels has shrunk rapidly. At the close of World War II, U.S. real gross domestic output per hour was virtually doubled that of any other major industrial power except Canada. By 1979, no less than nine nations had risen to four-fifths or more of the U.S. absolute productivity level.

According to recent projections, based on the best data available as of May 1981, France, Germany, and Belgium will overtake the U.S. level of real GDP per hour in 1985, 1987, and 1988, respectively. (Though Japan and Italy are recording rapid national labor productivity growth rates, their relative levels in the earlier postwar years were so low that it will be many years before these nations can overtake the U.S. in output per hour, at presently projected rates.)

Causes of U.S. Productivity Decline and Increasing Divergence in Productivity Trends, U.S. and Other Leading Industrial Nations:

There are almost as many opinions on the above two topics as there are economic analysts. However, especially during the past year and a half, some concensus has emerged as to the most important of the major influences.

Among the factors clearly established to be of outstanding importance are:

1. Industrial Investment: An increasing volume of evidence has accumulated demonstrating the close correlation between industrial investment (for plant, machinery, equipment, new products, and new methods) and productivity growth. The most recent and most definitive of the available studies, recently completed by John Kendrick, relates data on both levels of investment to gross domestic product and growth rates of the investment/GDP ratio to total factor productivity growth for eight major industrial nations, for the span 1960-73 and 1973-78. Correlation analyses completed by Dr. Kendrick with these figures show an extremely high positive coefficient. Obviously, Japan, West Germany and France blaze the leadership trail on both aspects of the analysis.

2. Declining Concentration on Research and Development: Though the specific correlations are more difficult to trace, and there is an acknowledged time lag between expenditure and achieved productivity growth, virtually all economic analysts now agree that "adequate" amounts of basic and applied research, development and effective dissemination of the results are among the major determinants of growth in productivity and in total output. For the U.S., research and development peaked as a percentage of gross national product (in "real" or constant dollar terms) in the mid-sixties; and slackened rapidly after the termination of the Apollo space program and the Vietnam war-induced defense-related research. In percentage terms, U.S. R&D as a percent of GNP declined one-fourth between the mid-sixties and 1978-79.

In the international context, the U.S. (the world's leader in science/technology/innovation in earlier years) has fallen rapidly behind the growth rates in the R&D-to-GNP ratio during the past fifteen years, far behind Russia to a level roughly on a par with West Germany and not far above the ratio levels of Japan and France.

A significant aspect of the R&D international picture is that a major percentage of U.S. R&D has been for space and defense rather than for civilian objectives. When a comparison is made on the ratio of civilian R&D to GNP, the U.S. has been sharply below the rate for West Germany and for Japan and even below the U.K. ratio for certain years during the 1967-76 span for which data are available.

3. Increasing Government intervention in the economy: The first states of the U.S. productivity slowdown were directly traceable to:

Expanded U.S. Government regulation of industry, including action directed to worker health and safety, environmental improvement, and expanded "cradle to the grave" security programs, involving large "transfer payments," an increasing Government budget and direct competition with industry for available capital. The results:

* Substantial increases in the rate of inflation and decline in the real value of the dollar.
* Diversion of both management attention and available investment capital from productivity improving innovation and improved plant/equipment, to conformance to frequently ill-conceived regulations;
* Creation of a pervading atmosphere of uncertainty, among managers, entrepreneurs, and investors, which further curtailed normal sources of funding for improved plant and equipment.

* As a direct result, a drop in average productivity growth of the private domestic economy during the span 1965-73 to a level a full third below the earlier two postwar decades.

4. The OPEC "oil shock" and the energy crisis of the 1970's: The 1973 OPEC oil shock, superimposed upon an already unstable economic situation in the U.S. and other industrialized nations, led directly and immediately to a worldwide recession. The oil embargo of October 1973 and subsequent quantum leaps in petroleum prices forced a revolution in long-accepted approaches to production, always based on cheap energy, with strong and continuing demand and at least relative price stability.

The problems were further aggravated by the "second oil price shock" of 1979-80, which forced the worldwide 1980-81 recession on a world barely recovering from the earlier energy impact. As a direct result, U.S. inflation, which had roughly doubled in 73-77, leaped to double-digit levels in 1978, 1979 and 1980. Interest rates soared to levels previously unheard of in the United States, peaking over 20%, prime rate. Production and productivity were directly impacted. The post-1973 recession forced a slow-down of productivity growth to just over 1% per year during 1973-77. This "slowdown" was succeeded, in turn, by an actual decline in labor productivity for the U.S. business economy for three successive years: 1978, 1979, and 1980, the first time in history this has ever occurred.

Among the specific ways in which the energy supply/cost problems adversely affected labor productivity (as itemized in a Congressional Budget Office staff study) are:

* Caused business to substitute labor for more expensive energy;

* Outmoded that portion of industry's capital stock which was not energy efficient;
* Shifted the focus of investment and innovation toward energy efficiency rather than labor efficiency;
* Produced chronic inflationary pressures that call for restrictive monetary and fiscal policies; thus
* Added to uncertainty about future economic conditions;
* Reduced growth in real income, stimulating labor force growth;
* Depressed the demand for goods and services generally.

As pointed out in the Congressional Budget Office study and in many other writings, the energy crisis has exerted a severe adverse impact upon productivity growth, which cannot be measured satisfactorily by conventional growth-analysis models. Some econometricians, including Jorgensen, attritube at least 0.7 percentage points of the productivity slowdown to this problem, taking into account both direct and indirect effects. (Since the decline in average annual labor productivity growth rate between 1965-73 and 1973-78 totaled 1.4 percentage points, the energy contribution may thus be assumed to account for a full half of the slowdown).

It is inescapably clear that the century-long tradeoff of energy intensive but high productivity capital for labor input has been reversed. Managers have been forced to turn to the use of more employees, more man-hours and less energy consuming machinery. The extent of this trade-off (which was questioned until very recently by some economists) is not showing up clearly in the statistical series.

Clear evidence appears in:

* the sharp slowdown in growth rate of capital stock per hour in the post-OPEC years;

* the even sharper increase in employment per capita and in aggregate hours input during the same span; and
* a significant reduction in BTU's of energy input per dollar of real GNP, reflecting the reduction in energy useage.

5. Other factors: There were significant factors other than differential rates of national savings and investment of capital for the industrial plant which contributed to the increasing divergence in productivity growth rates of the U.S., the U.K. and Canada (on the one hand) and Japan and the leading Continental European nations (on the other). Included in such factors were:

* Massive postwar transfer from the U.S. to Japan and Western Europe of the best of both management and technology then extant;
* Economic assistance in the rebuilding of wardevastated industrial plant;
* A national dedication to improvement, rebuilding of industry, and expansion of export markets, especially in the cases of Japan, Germany, France, Italy, Belgium, and certain smaller Asian nations;
* A degree of forward planning and collaboration between industry, labor, Government, and the academic community which assured rapid improvement of productivity; and
* In the post-OPEC period, as compared to U.S. experience, more effective action by the Governments of Japan, Germany and Franch -- especially -- in coping with the energy crunch, in terms of both supply curtailment and quantitative leaps in prices. As a result, recessions have tended to be less severe; both unemployment and inflation were controlled more effectively (not so in France, nor in Italy, however).

* Continuing focus on acceleration of innovation and on expanding international market share.

* As a by-product of more substantial savings and investment of capital for industry, average age of plant and equipment in Germany and Japan -- perhaps also in France -- has declined to levels ranging downwards to less than half that of the United States.

SPECIAL NOTE: The specious "employment shifts" item has been for some time a misleading item in analyses of causes of U.S. productivity decline; and is thoroughly blasted by recent data on actual levels of labor productivity (real output per hour) for the individual sectors of the economy, and for the combinations of goods-producing versus services-producing industries. Certainly, the ratio of both employment and hours worked has shifted from the goods-producing to services-producing sectors. HOWEVER, actual weighted average levels of productivity are higher for the services producing group than for the goods-producing sectors. Growth-rate in labor productivity for the services industries has been slower than for the goods-producing sectors, 1948-80 (1.9% per year vs. 2.9% per year for the goods industries). In terms of actual levels of real output per hour, however, the following is revealing:

| | 1948 (real $ per hour, | 1979 all persons) |
|---|---|---|
| Weighted average, goods industries | $2.93 | $7.37 |
| Weighted average, services sectors | 4.12 | 7.57 |

6. Energy Crisis Impact: The unprecedented increases in the cost of energy following the Arab oil boycott of 1973-1974 has had a substantial negative impact on the productivity growth in the United States. One result of these energy cost increases would be to shift investment

toward more labor-intensive rather than energy-intensive processes. Berndt and Jorgensen, in the October 1978, Spectrum productivity issue of the Institute of Electrical and Electronics Engineers stated "Since energy and labor are substitutes, energy price rises imply a tendency to increase labor input to obtain a given output. This implies further, at least, a reduction in the rate of increase of labor productivity." This potential toward realigning emphasis more toward manual labor in lieu of increased energy requirements, slows up the long-term trend to mechanization and leads to productivity growth declines.

7. Worker Attitudes: A recent survey of company presidents conducted by the Gallagher President's Report, Inc. revealed that in addition to government regulations and inadequate incentives for capital investment, they identified the major causes for U.S. productivity decline to include union work rules, worker job indifference and deterioration in labor quality. The management group is obviously subjective. Undoubtedly these factors were further enhanced by management's inattention to productivity, the changing attitudes of the work force, and the need to adjust and improve management techniques.

II. Importance of productivity

A. What is productivity?

1. $\frac{\text{Output}}{\text{Input}}$ - labor, materials, capital, energy

2. Working smarter, not harder

3. Getting more out of what you put in

B. Productivity is not:

1. Profitability

2. Speed up

C. What is quality of work life?

1. Difficult to define, because each person has own definition

2. Two perspectives:

a. Employee: Subjective evaluation of total environment, "Are my goals being satisfied in the attainment of the organization's goals? To what degree?"

b. Management: The process of aligning the work environment so that employee goals are optimized in the attainment of the organization's goals.

3. Our definition for this course is:

"A generic phrase that covers a person's feelings about every dimension of work, including economic rewards and benefits, security, working conditions, organization, and interpersonal relationships, and its intrinsic meaning in a person's life."

D. What is the relationship between productivity and quality of work life?

1. Productivity can affect quality of work life.

2. Quality of work life can affect productivity.

E. Benefits your organization can derive from improving its productivity and quality of work life:

1. Increased profits

2. Improved competitive position

3. Improved employee satisfaction

4. Growth

5. Improved communications through employee involvement

6. Preserved job security

7. Relieved pressures of rising costs in labor, capital, materials, and energy

8. Reduced waste and conserved resources

9. Enhanced customer satisfaction

10. Reduced impact of staff shortages and budget cuts

11. Enhanced flexibility of response to changing economic conditions

12. Better utilization of employee skills

F. Consequences of declining productivity

1. Productivity decrease

2. Cost per unit increase

3. Less competitive

4. Market and sales decline

5. Profitability decline

6. Negative effects upon

a. Capital

b. Materials

c. People

7. Further productivity decrease

G. Effects of increasing productivity

1. Productivity increase

2. Cost per unit decrease

3. More competitive

4. Market, sales, profitability increase

5. Positive effects on

a. Capital

b. Materials

c. People

6. Further productivity increase

H. How is Productivity increased? Productivity gains come about in five ways by changing the input-output ratio.

$$\text{Productivity} = \frac{\text{OUTPUT}}{\text{INPUT}}$$

1. $\frac{\uparrow}{\uparrow}$ Output increases faster than input; "managed growth."

2. $\frac{\downarrow}{\ }$ Input decreases more than output (e.g., phasing out an old product, closing an inefficient plant); "managed decline".

3. $\frac{0}{\downarrow}$ Producing the same output with fewer inputs; cost reductions and greater efficiency.

4. $\frac{\uparrow}{0}$ More outputs from the same inputs; "working smarter".

5. $\frac{\uparrow}{\downarrow}$ The ideal; maximum increase in the ratio by a combination of the above.

I. Common Misconceptions

1. Increased productivity means layoffs.

2. Increased productivity means working harder.

3. Unions oppose productivity improvement.

4. Increased productivity means higher profits -- not higher wages.

5. Increased productivity comes from new technology.

6. Increased productivity depends upon government action.

7. Increased productivity means lower quality.

8. Productivity of the company can be measured by the financial statements.

9. Productivity means units produced per hour.

10. Productivity of white-collar and knowledge workers cannot be measured.

J. Overcoming resistance to productivity improvement

1. Productivity improvement means something must change.
2. BOHICA - Bend Over, Here It Comes Again
3. WIIFM - What Is In It For Me?
4. Most common questions asked about change:
   a. Why should I change?
   b. What's in it for me?
   c. Will the change process be practical?
5. Probability of change = Need x Benefit x First Step

K. Force Field Analysis Diagram

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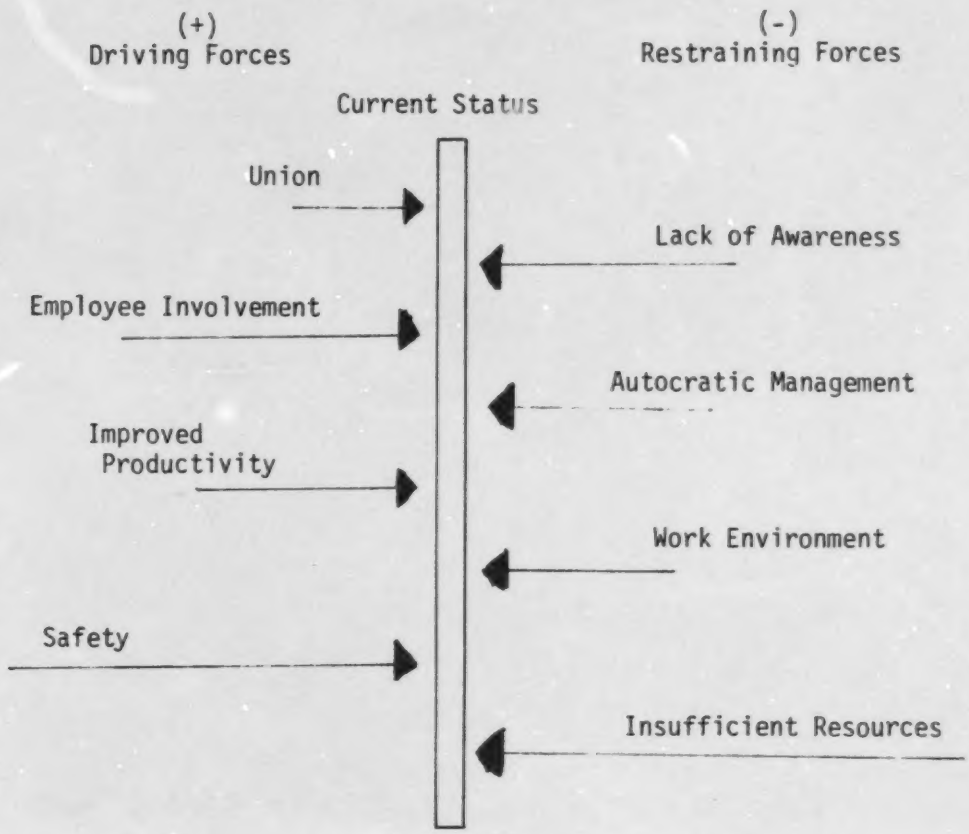



Good framework to organize thinking.
Use to look at possibility of change.

## SUPPLEMENTARY MATERIALS

A. Productivity Focus

B. Exercise - Characteristics of Organization

C. Films:

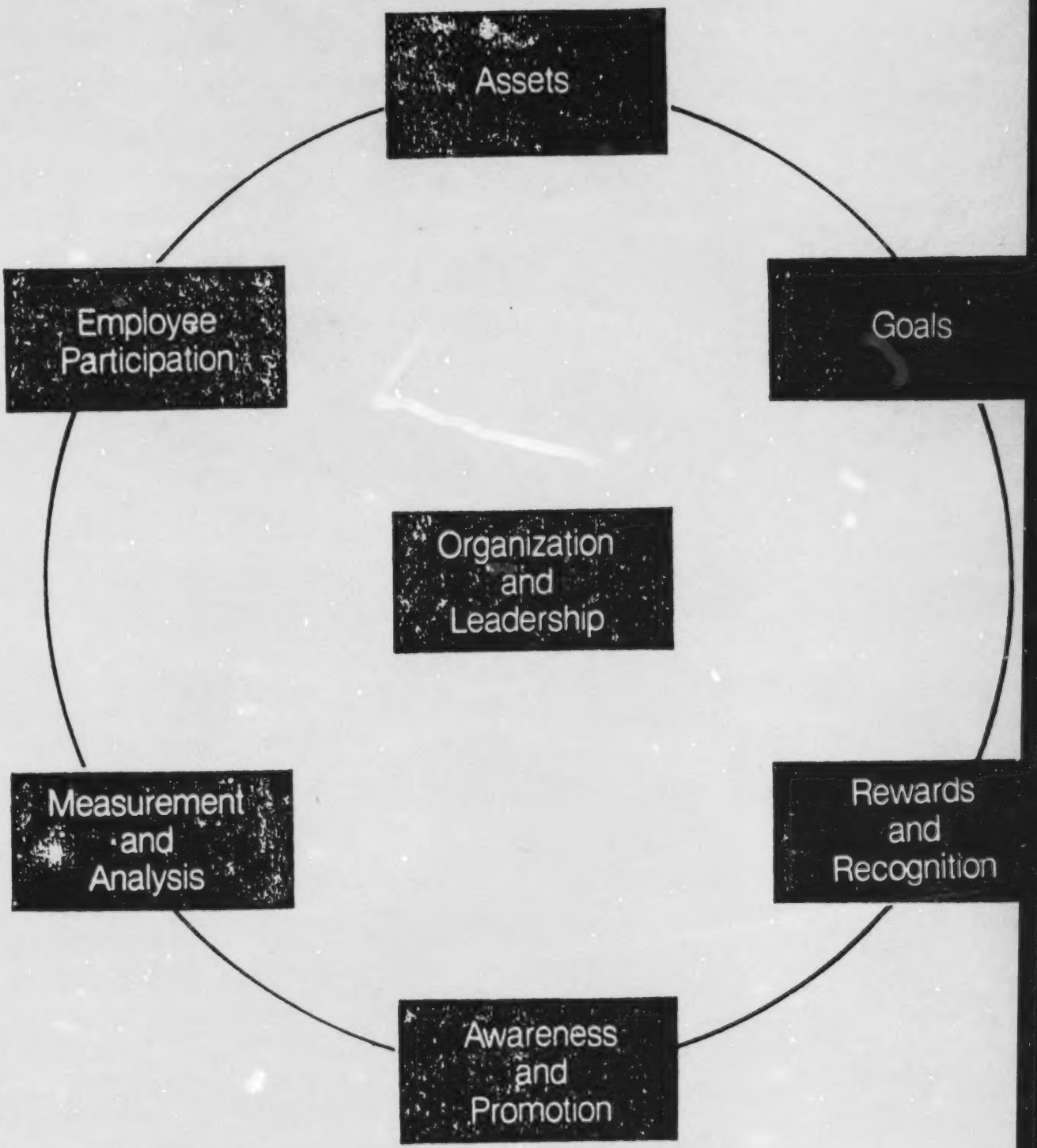
1. "A Productivity Film" (7 minutes)

   LCA Video/Films

2. "Productivity Pay-Off" (4 hour video-based training program)

   LCA Video/Films

# Productivity Focus




PRODUCTIVITY FOCUS:
Productivity Focus is a structure and process for organizational diagnosis and planning. It serves as the basis for systematically examining the seven key areas of organizational functioning specifically with respect to their impact on productivity and quality of work life.

EXERCISE

Characteristics of Organizations

Worksheet

## CHARACTERISTICS OF ORGANIZATIONS

### SUMMARY OF RESPONSES

| WORST ORGANIZATION | BEST ORGANIZATION |
|---|---|
| o Poor leadership | o Good leadership |
| o Poor organization | o A common purpose or goal |
| o Poor communications | o Participation/involvement |
| o Lack of common goal or concern | o Good communication |
| o Feeling of pressure | o Common objectives |
| o Lack of cooperation/team | o Teamwork |
| o Disregard for the employee or individual | o Success |
| o No reward/recogition for the individual | o Fair and equitable treatment |
| o No feeling of contribution | o Sense of excitement |
| | o Recognition |

Several conclusions become apparent when we differentiate between the characteristics of a good and bad organization.

- o First, you can easily describe the differences. All of us can relate to a good and a bad organization with which we have been associated in the past.
- o Second, many characteristics are opposites. For example, good communications and a spirit of cooperation are necessary for a good organization. While in a poor organization, poor communications and a lack of cooperation result in poor performance -- uncooperative, uninformed participants in the group.
- o Third, there is nothing in any of these characteristics that discusses technology, economic considerations, the type of product or service with which the group is involved. Each one of the characteristics involves people and deals with human relationships. The entire focus is on human qualities and how and why people work together well.

Conclusion

Several of the characteristics of the best organizations include participation, a common goal or purpose, teamwork, and good communication. The objectives of this seminar are to expose you to various approaches, techniques, or as some companies state "the way of life" that will help improve these characteristics in your companies.

## Subsection 1.2 - Commitment

I. Organizational Commitment

A. Top management

1. Become aware of productivity and quality of work life issues.
2. Insure that the organization understands the importance of productivity improvement.
3. Determine the appropriate priority for productivity emphasis.
4. Participate personally in recognition of accomplishments.
5. Provide climate of continuity for productivity emphasis.

B. Middle Management

1. Become aware of productivity and quality of work life issues.
2. Design and carry out the systems to communicate and support the awareness messages.

C. Foremen/First line Supervisors

1. Become aware of productivity and quality of work life issues.
2. Provide the link between the organization's goals and the people who are producing.

D. Employees

1. Become aware of productivity and quality of work life issues.
2. Communicate upwards
3. Make suggestions
4. Understand the relationship of productivity to job performance.

II. Productivity and Quality of Work Life

A. What is it?

"All people are at their best when they are essential members of an organization that challenges the human spirit, that inspires personal growth and development, that gets things done and that symbolizes only the highest standard of ethical and moral conduct -- that's what quality of work life is all about." Dutch Landon

B. Common factors shaping QWL

1. Knowing we make a difference to the organization
2. Seeing the results so we can take pride in our contribution
3. Contributing to the effectiveness of the organization

C. QWL assumption

1. People want to contribute
2. People are experts on their jobs
3. That expertise should be tapped
4. Better decisions and actions can result

D. Why QWL now

1. Changing work force
2. People control results
3. "Age of Entitlement"
4. "We've tried everything else"

E. The "new work ethic"

1. Value Systems
    a. Changed values -- all in 20 years
        1. Ecology and Earth Days
        2. Civil rights and affirmative action
        3. Age, Vietnam, veterans, handicapped workers
        4. Women's rights, gay rights
    b. Parenting Values and Discipline
    c. Educational Institutions
    d. Television
2. Changing Expectations
    a. Material rewards
    b. Increased educational level
    c. Attitudes toward authority

d. Mutipler-worker families

e. Communications revolution

3. Changing Environment

a. Younger workforce

b. Mistrust of institutions

c. Personal value systems

d. Economic pressures

e. Service economy

f. Social accountability

g. Too much affluence

h. Work ethic decline

i. Slowing achievement drive

j. Loss of incentives

k. New Values

F. How to improve QWL: Involve employees

1. Share information

2. Make them feel like they make a difference

3. Go to them for ideas

III. Employee Involvement

A. What is EI?

1. An "umbrella" term to describe a variety of ways people within organizations can work together to improve productivity and quality of work life

2. It's a management philosophy that involves employees in the decision-making process that affects them

3. It means the effective use of all human resources within organizations -- and that includes all levels

4. It's an ongoing process which encourages both professional and organizational growth

B. Why is it so important now?

1. Inflation and declininig productivity in the U.S. have increased our need to be more competitive with Japan and Europe.

2. EI has contributed greatly to their economic success.

3. Another reason is the changing values of our work force:

   a. Employees want more individual respect and recognition for their effort

   b. Employees are not as motivated by money, security, etc.

   c. Employees are better educated, having "rising expectations"

C. What are the assumptions that make EI work?

1. Employees have unique sources of expertise about their jobs

2. This expertise is not being tapped effectively

3. Employees want and are able to contribute this expertise

4. Employees want to have more input into the decisions that affect them

5. Use of this resource can lead to better decisions

D. What does EI appropriately include?

1. Sharing business and problem information

2. Feedback and responsiveness to employee questions, suggestions, concerns

3. Inter- and intra-departmental cooperation at all levels of the organization

4. Employee influence in decisions that affect them

5. Mutual respect and trust among individuals

6. Recognition for individual and team efforts and accomplishments

E. Who is involved?

1. Appropriate for <u>any</u> organizational function or unit or for the entire company

2. Appropriate at <u>any</u> level -- management and supervisors are employees, too

3. Internal support personnel for data collection, etc.

4. The union

F. What are the potential barriers?

1. Lack of management commitment

2. Inadequate management planning and preparation

3. Lack of resources

4. Insufficient program planning and goal setting

5. Unrealistic or inappropriate objectives and time frame

6. Insufficient union involvement

7. Inattention to maintenance and evaluation of intended and unintended consequences

8. Attitudes which lead to "quick fix" and "shot gun"

9. Inadequate training

G. What does a successful EI effort require?

1. Long term perspective and effort

2. Management and union commitment

a. Attitudes and behavior congruent with goals

b. Willingness to stand behind those involved

c. Adequate resources

1. Budget

2. Time

3. Facilities

4. Staff

d. Systematic evaluation and flexibility for program modification

e. Realistic expectations

1. Success will require extensive efforts

2. Not a short term success story

3. Problems will surface

f. Continual maintenance

H. What are the possible results?

1. Employees provided with a sense of value and accomplishment
2. Greater commitment to organizational goals
3. More congruency between individual and organizational goals
4. Higher levels of quality and productivity
5. Greater responsiveness to problems and their solutions
6. More satisfying working relations and environment

SUPPLEMENTARY MATERIALS

A. Case Studies

1. Arcata Redwood

2. Ralm and Haas

3. Bendix Corporation

B. Exercise

Test Your Productivity/Quality of Work Life Awareness

C. Films and Audio Visual Aids

"Productivity and the Self-fulfilling Prophecy: The Pygmalion Effect," McGraw-Hill Films, Del Mar, California 92014 (714) 453-5000

"The Time of Your Life," Calley Curtis, 1111 North Las Palmas Avenue, Hollywood, California 90038 (213) 467-1101

"You Pack Your Own Chute," Ramic Productions, 4910 Birch Street, Newport Beach, California 92660 (714) 833-2444

"Firestone/23/28" J. J. Hennessy, 900 Palm Avenue, South Pasadena, California 91030. (213) 682-2353

"Guardian Life" Guardian Life Insurance, 201 Park Avenue South, New York, New York 10017. (212) 473-3000

"The Promise of Productivity" U.S. Chamber of Commerce, 1615 H. Street, N.W., Washington, D.C. 20062. (202) 659-6183

"Will There Always be an England?" U.S. Chamber of Commerce, 1615 H Street, N.W., Washington, D.C. 20062. (202) 659-6183

"Who Killed the Sale"
"Managerial Revolution"
"Increasing Productivity"
Thompson, Mitchell and Associates, 2969 Grandview Avenue, N.E., Atlanta, Georgia 30305 (404) 233-5435

"Making Human Resources Productive"
"Motivation and Productivity: A Series"
BNA, Communications, Inc., 5615 Fisher Lane, Rockville, Maryland 20582. (202) 452-4500

"What Killed the Bell System," Mr. Fid Crowe, Division Manager, Ohio Bell Telephone Company, 23611 Chagrin Blvd., Room 106, Beachwood, Ohio 44122. (216) 822-7214.

"Genius at Work," Public Affairs Department, Caterpillar Tractor Company, 100 N.E. Adams St., Peoria, Illinois 61629, (309) 675-1000.

"People and Productivity: We Learn from the Japanese," Encyclopedia Britannica Corporation, 425 N. Michigan Avenue, Chicago, Illinois 60611 (312) 321-6800.

"The Case for Productivity," Bureau of Business Practices, 24 Rope Ferry Road, Waterford, Connecticut 06368 (800) 243-0876.

Arcata Redwood Company
P. O. Box 218
Arcata, California 95521
Telephone: 707/443-5031
Management Contact: Jim Richards
Director of Personnel, Arcata Forest
Products Group

Type of Program: Survey Feedback, Communications
Date Program Initiated: November, 1978
Organizational Unit: Redwood Operation
Number of Employees Involved: Approximately 390
Worker Classification: Non-union, Exempt and Non-exempt
Structural Characteristics:
Technology -- Manufacturing (Commercial; Some Continuous Process)
Size--Small
Degree of Centralization -- Centralized
Organizational Climate: Primarily Autocratic

The activities at Arcata Redwood Company illustrate how an employee attitude survey can pinpoint specific organizational needs. In this case, Arcata trained its supervisory personnel in behavior modification to help improve intra-organization communications.

## Organizational Background

Arcata Corporation's products and activities consist of printing and printed products; molded containers; and timber and lumber processing. The company produces books, greeting cards, and other paper products; prints magazines, catalogs, directories, brochures and other commercial work; provides microfilming services for hospitals; and produces molded wood pulp and foam plastic products for the packaging and distribution of food. In 1979, corporate net sales were $579.8 million and net income was nearly $30.5 million.

Arcata owns 76,000 acres of timberland in Northern California, where it conducts timber harvesting, reforestation and milling operations. Arcata Redwood Company, which is part of the Arcata Forest Products Group, is a subsidiary of Arcata Corporation. It was formed in the late 1930's to enter the redwood lumber/logging business. Arcata Redwood has slowly developed into a modern forest products company with integrated whitewood/redwood operations. The whitewood operation employs approximately 440 people, while the redwood operations (with which this case study is concerned) employs 390 people.

## History and Development of the Program

Arcata Redwood has had a history of low absenteeism, low turnover, non-union status, good safety records, and positive labor-management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relations. However, in late 1978 the Vice President of Personnel became interested in having an outside consulting firm conduct an attitudinal survey in the company. He suggested this possibility to the President and executive committee. The President of Arcata Redwood wished to learn employees' attitudes toward the company and saw the survey as a means to this knowledge. He issued a memorandum expressing his desire that all operations and staff coordinate and cooperate."

The assessment of employee attitudes through a survey uncovered some deficiencies in the company's employee relations and communications. These results prompted the President to contract further with the same consulting firm for an extensive supervisory/management training program in behavior modification techniques. Although the company has had long-standing good relations with its employees, its management was seeking yet another tool to strengthen this positive relationship and ensure their non-union status.

## Description of the Program

The survey was administered in November and December of 1978 to all salaried employees and a representative group (one-half) of the hourly employees. It was administered by a consultant from the outside consulting firm to groups of no more than 25 people simultaneously. There were a total of 100 questions, answered on a 5-point scale, which assessed the employees' view of the company in seven major areas. The areas included (1) written policy and communications, (2) performance measurement and feedback, (3) management, (4) problem solving/decision making, (5) self-management, (6) job satisfaction, and (7) job performance.

The survey results were analyzed and compared with national norms for the same survey items. The consultant reported results of the analysis and comparison first to top management, then to all employees of Arcata Redwood. Employees were pleased to see the results and learn how their attitudes compared with those of employees in other organizations. The survey analysis revealed the need for substantial improvements in intra-organization communications, oral instructions, and feedback to employees.

In response to these needs, the President of the company contracted further with the consulting firm for an extensive management training program in the skills of behavior modification. The program's duration was six months, ending in November of 1979. During these six months, all management personnel (38 individuals) at Arcata Redwood (from the first-line supervisors through the President) met for two hours one night a week with a representative of the consulting firm. The managers were divided into four separate groups (all levels in each group) in order to achieve reasonable-sized groups with which to work. Each group met on a different night. All supervisors were taught the skills of recognizing and positively reinforcing productive behaviors and de-emphasizing negative behaviors, such as excess visiting during work hours.

Supervisors were required to practice their skills through on-the-job projects. To pursue the excessive visiting example, a supervisor would not discipline the visiting employee, but choose a method to positively emphasize not visiting. The supervisor might call a meeting of all those employees who work well and use their time productively just to thank them for the good job they do. Another method of approaching the problem is to measure the group's output and simply report it to them. In these instances, the group members are usually surprised at their low output rate. Therefore, they increase their performance immediately, reducing the amount of time spent visiting. This increased performance is typically a lasting change, rather than a transient one. If the latter strategy is chosen and behavior favorably changes, the supervisor then positively reinforces the involved subordinate(s).

During the six-month training, there were two additional workshops -- one approximately mid-way through the training program and one near the end. Each workshop lasted two and a half days. These workshops afforded the managers the opportunity to practice their new management skills with the observation and feedback of the outside consultants. During this time, everyone had opportunities to role-play with everyone else (from the first line supervisors through the President).

Since completion of the training, many supervisors have continued using behavior modification techniques with their subordinates. Emphasis is on positively communicating with their employees. Supervisors who continue to use the techniques have various feedback projects in operation. Maintenance of the program entails a one-day workshop each year with the managers and outside consultants. Costs of the program were approximately $110,000, including administration and assessment of the survey and six months of consultant time for the training program. The one-day maintenance workshops will add further costs.

## Problems

Difficulties encountered have stemmed from resistance to change on the part of upper and middle management. From the exploration stage through the entire program one particular member of the upper management team was in opposition to all activities. His position was that his management style had been effective thus far and he saw no reason to change. He did participate in the survey and training activities in response to the President's stance on the program.

Since the training program, first-line managers have been the primary group to continue utilizing the behavior modification techniques, communicating with their subordinates. Middle and upper management, for the most part, have reverted to the management styles they utilized prior to the training. It is unclear at this point how this problem will be handled, if at all.

## Results

Impacts of the program fall into three areas: financial, productivity, and employee morale. Results have not been measured on a company-wide basis, however, some isolated changes have been measured.

Financially, management feels the program has been more than justified through cost-savings. One example is the reduced cost of workers' compensation to the company. Since supervisors have been working more closely with their employees, workers have become more safety conscious. This has resulted in reduced accidents to such an extent that from 1978 to 1979 Arcata Redwood's cost of workers' compensation dropped 8 percent, while, according to the Consumer Price Index, the costs of medical care rose 14.6 percent. Management has also noticed that employees are more concerned with energy conservation, as they turn off machines and lights when appropriate.

Improvements have likewise been seen in productivity and quality. One chop line (which is a production line) increased its output 40 percent, while changing from a nine-hour to an eight-hour shift. In another case, at one of the logging sites a crew increased its yard production by 20 percent. In terms of quality, one grade standards crew decreased its percentage of misgraded boards from 10 percent to 4 percent. Each of these three improvements occurred in only one day as a result of precise feedback from supervisors. The improvements were not short-lived, but have been maintained at the increased level.

Upper management has also noticed an improved employee morale. Since the attitudinal survey, many more employees go to the personnel office simply to ask questions or communicate concerns. Employees seem to feel much more comfortable communicating to management. In addition, even though the company is non-unionized, it has had a grievance procedure for its employees since early 1976. There have been no grievances since the management training program ended. Prior to that time two or three grievances a month were commonplace.

## Future Plans

Although there are no extensive plans for the future, the top management group is currently examining the possibility of establishing a number of committees. The committee structure, if established, would provide a vehicle for directing employees efforts to solve work-related problems.

8/29/80

## QWL/PRODUCTIVITY RELATIONSHIP: A GRASS ROOTS EXPERIENCE

Early in 1980, Rohm and Haas finalized a decision to build a new specialty chemical plant on a 60 acre site in LaPorte, Texas which is about 30 miles east of Houston. I accepted the assignment as Plant Manager of Rohm and Haas Bayport Inc.

Early discussions with my supervisor led to the agreement that we wanted an operating system in which individual responsibility was going to be encouraged. This was central to our thinking and indeed was based on a variety of personal experiences in operations.

The model that guided my early thinking on individual responsibility and initiative was the experience I personally gained as an operating manager during a six months strike several years ago at another facility. During that time, we trained a number of inexperienced salaried employees, from mailboys to chemical engineers to be chemical plant operators. I have always felt that those particular six months were a study in how people could positively affect the operation of a chemical plant provided they received the necessary support to get the job done. I subsequently found that this model was a good deal different from what we later experienced at Bayport. However, it provided a starting point for me.

Further discussions with other management personnel in our Corporate Headquarters led us to a decision to hire a consultant to help us design a QWL oriented participative system for Bayport. We interviewed several candidates for the assignment and actually selected two consultants. Mike Sonduck was

selected as our design consultant and Norman Paris as our operations consultant.

We began with the basic premise that the business and people outcomes for the Bayport Plant would be congruent. In order to proceed, it was necessary to prepare outcome statements for the plant. The statements should accurately reflect the way we would conduct our business and make decisions. The statements form the basis for establishing the culture of the plant by which the designs are then fixed. This is represented by the 3 box model shown on the screen. The outcome statements are the finished product and thus must be completed prior to establishing the culture and design itself.

The process that you go through to prepare outcome statements is lengthy and tedious involving a great number of people. Our statements were based upon interviewing a number of people in our Engineering Division and Business Teams. This was done in preparation for a meeting of some twenty-five people in September of 1980 in Philadelphia. The meeting included representatives from North American Region Personnel, Business Teams, Central Engineering, as well as the Bayport Staff. Individual opinions were given about the Bayport Plant outcomes. As you can imagine, there were many diverse opinions about what ought to be achieved in operating the Bayport Plant. A great many notes were taken and these were ultimately distilled into the outcome statements.

Each statement is followed by a descriptive paragraph. These statements and their definitions were established by the Bayport Staff in December of 1980. They were then reviewed by all the meeting participants as well as other interested managers. The final form of the statements is attached.

The next step in our work was writing the description of the culture we wished to establish at Bayport. This was rather easily accomplished as it followed from our outcome statements. These are the culture phrases that were selected.

The next phase was the critical one of design. We established that several factors must be considered in our design. Some of the important criteria were multi-skilled technicians, pay for knowledge, no third party representation, self-managing teams (no shift foremen), open communication and minimum management structure.

Translation of our outcome statements, culture and design criteria into actual practice began with agreement on the need for careful selection of plant technicians. We knew that our system would require people different from the usual plant employee to be able to work in a non-traditional type of plant. We designed a new application form and prepared newspaper advertising. After much discussion, we agreed to use the Texas Employment Commission to help us screen applicants. They tested all applicants for mathematical knowledge, English comprehension and spatial relations. We interviewed only those candidates who scored above average on the TEC tests.

With the help of Corporate personnel, we decided to utilize a concept called Targeted Selection to enable us to hire the kind of person we desired as a Plant Technician. This concept starts with the determination of what kind of personal attributes "successful people" exhibit in similar types of jobs. These are the dimensions that we chose from the several different kinds of attributes that we originally listed. We then prepared definitions of the

dimensions in order to agree on what constituted success or failure. The definitions were tailored to our outcomes and culture. A copy of these dimensions along with their definitions is attached.

A specific format and structure was developed for the interviews and specific questions were asked of each applicant. All of this was done to assess previous job/school behavior of the applicants in order to judge future tendencies. The staff spent two full days training for the interviewing of the candidates. Each candidate was interviewed by two staff members who asked specific questions relating to the dimensions. The staff members then integrated the results and arrived at an overall rating of the candidates. In all, we received over five hundred applications, tested over four hundred people at Texas Employment Commission, interviewed one hundred fifty-five candidates and selected fifty-two for consideration. We then ranked the selected fifty-two. From this ranking we offered jobs to the top sixteen candidates (actually twenty because four did not accept our job offer). Incidentally, we met all of our EEO requirements.

Technicians began work on September 2, 1981. Since previous plant experience was not a hiring criteria and only one of the sixteen hired actually had previous experience, we had arranged for training to begin at the outset. Two teams were formed. One team spent the week in operational training on the site beginning with packaging operations and utilities training. The other team spent the week in laboratory analytical training followed by classroom lecture at a local junior college. The teams then switched assignments the following week. In all, each technician received 240 hours of classroom and laboratory training and 240 hours of operational training. In addition, each

technician received two days each of first aid and fire fighting training. With imput from the technicians, we later decided that much of the lecture training off site was of little value and it would be necessary to prepare our own training material. It was also clear that the material needed to be learner based so that individuals could proceed at their own pace. We are continuing to work on this program utilizing TV tapes we have prepared our selves as well as purchased slides, tapes and instructional booklets.

The technicians spent the last part of 1981 on shift and in startup of the plant utilities. Early in January, 1982, we began startup of our Specialty Monomer plant followed by startup of our Blazer herbicide plant beginning in April. Both of these plants continued startup activities for the better part of 1982 and have achieved full production in 1983. The rest of this discussion is devoted to several areas of concern about the success and failures in the Management system we experienced during startup.

One of the important design criteria we had was the use of multi-skill technicians in our system. The obvious objective in using multi-skill personnel was to minimize the number of operating personnel and at the same time offer challenging work to the technicians. It also formed the basis for the pay for skills system which I will discuss later. The multi-skill concept we had for Bayport included both the laboratory analytical requirements and material handling, as well as control room, rack and utilities assignments. The experience gained in all of the assignments helped develop an appreciation for all the functions as well as supporting the "operating team" concept. Our success with this concept has generally been favorable but we did not recognize the impact that the length of the rotating cycle had upon the

learning of the technicians. Weekly rotation among the several assignments was practiced for much of 1982 but was lengthened to approximately one month's rotation later in the year to improve the learning. Some technicians were originally opposed to the change to one month but comments were favorable following experience with the lengthened cycle. Additional cycle modifications may yet be necessary, but the general notion of multi-skill is certainly looked upon with favor by the technician group and is part of our culture.

The pay for knowledge system was in concert with the multi-skill notion. We deliberately did not set up any detail beyond the basic concept you see. Early in 1982, a team of three technicians and three supervisors was formed to write out the details of the system to be followed. Many meetings were held and much discussion took place. Consensus was finally reached about how the first raise was to be awarded. It included both peer and supervisor evaluation as well as written testing and on-the-job demonstrations. Technicians were rated and raises were based on final summary of all ratings and test results. Of the sixteen technicians, three did not receive raises and had to be re-tested within an 8-week period. Each of the three subsequently passed and received minimum raises. The system has been modified from the original evaluation and technician response has been mixed. More work has been done by a task force recently formed to enhance the system based on our experience. Current thinking revolves around more direct feedback more frequently so that formal evaluations are not a surprise.

The selection of the original sixteen technicians was described in detail earlier. Despite the work that was done, there was more turnover experienced

in the two years than expected. We lost eight technicians, seven of which were failures from a selection standpoint. We have hired eight replacements plus four additional technicians during the period. However, we have incorporated a final evaluation by the technicians of candidates that have been screened by supervision. Final selection is made by the technicians. We believe this has improved our ability to select the proper type of employee for our system. Only one of the last ten selected has failed to perform.

The Targeted Selection concept has such a favorable impact that it was used to select staff openings in the plant beginning in the latter part of 1981. Many of the same dimensions were used with questions modified as needed to obtain necessary behavior information. The selection process was modified so that the hiring manager was responsible to assess the "technical" capability of the candidates and the interviewers (potentially peers and subordinates) assessed the "dimensional" quality of the candidate. The hiring manager then makes a hiring decision with the "advice and consent" of the interviewers.

It is our intention to operate the plant without shift supervision of any kind. One of our early mistakes was to follow this objective so seriously that we did not have enough experienced operating personnel on the site to cope with the myriad of equipment and process problems encountered in the startup. This hindered the development of the technicians and caused other hardships. We rectified this during the year by temporarily hiring experienced startup personnel and supplying experienced Rohm and Haas employees to help solve the startup difficulties.

We still intend to operate the plant without shift supervision. To that end,

we are working on incorporating the various functions of the front line supervisor into the technicians work so that we now have assigned various coordinator responsibilities on each team. These include maintenance, overtime, shipping/receiving and safety coordinators.

We spend a good deal of time in open communication efforts at Bayport. This involves regular meetings of the various teams (shift, technical and management). Shift turnovers are important to any operation and turnovers on day shift involve technicians as well as other supervisory and management personnel. We continue to learn how to behave in a participative system under the guidance of Dr. Paris, our consultant.

We have recently restructured our supervisory and management group into a new organization reflecting an effort to develop a team philosophy in our supervisory group. Our efforts are geared toward the focused factory concept as has been expounded by Wickham Skinner of the Harvard Business School. We work on role identification for each member of the Technical Team to provide for proper support of the Technician Team, but this has proceeded slowly due to the technical demands on the individuals.

The one thing I can say for certain is that the system is dynamic. Change continues to occur, but we believe it is healthy for the system and it is for the benefit of the employees and the Company. There is no doubt that the employees of this facility are motivated to reach the objectives as defined by the outcome statements.

## ROHM AND HAAS BAYPORT INC. IS:

### A PEOPLE ORIENTED PLANT

We are intimately involved in the operation of our plant to produce quality products in a safe and efficient manner. We derive satisfaction from and have security in our jobs. We are a highly motivated and committed team that participates in decision making and problem solving. We are well informed by maintaining an open communication system in which innovative thinking is encouraged in meeting our goals.

### A CUSTOMER ORIENTED PLANT

We care about our customers and are responsive to their needs by working closely with business teams. We make timely shipments of quality products which meet performance claims. Business interruptions are minimized by conscientious people and preventive maintenance programs.

### A COST EFFECTIVE PLANT

We are an efficient, competitive plant where objectives are met or exceeded. By eliminating errors, we minimize costs and satisfy budget guidelines. We maintain a safe environment, high quality performance and a stable work force.

### A CONCERNED CORPORATE CITIZEN

We are a good neighbor by actively supporting community needs and maintaining the physical environment. We are involved in achieving government goals. We support local art, science and charity programs as representatives of the Rohm and Haas Company.

### A MULTI-SKILL PLANT

We use our abilities to the fullest extent and we receive training to acquire various skills. This training is a necessity to meet our commitment to perform a variety of assignments.

### AN INTEGRAL PART OF THE ROHM AND HAAS COMPANY

We are responsive to the needs of the company. The company is responsive to our needs. Good interactions are maintained throughout Rohm and Haas by cooperation and meaningful communication.

## CULTURE

- PARTICIPATIVE
- SELF-MANAGING
- OPEN
- MULTI-SKILLED
- COMPETITIVE
- INVOLVED
- SHARING
- LEARNING
- SAFE
- SUPPORTIVE
- RECOGNITION
- TRUST
- RESPECT
- RESPONSIBLE
- COMMUNICATIVE
- DECISION MAKING
- INTERESTING
- CHALLENGING

| DIMENSION | | |
|---|---|---|
| RESPONSIBILITY | • | Maintaining high standard of work performance, dedication to excellence/quality, setting goals for self and organization. |
| MOTIVATIONAL MATCH | • | Congruence of the person's needs, preferences, and satisfactions with the demands, opportunities, and requirements of the job. |
| VERSATILITY | • | Handling multiple tasks, interruptions, and diversity in a work setting. |
| LEARNING ABILITY | • | Assimilating and applying new job-related information. |
| HONESTY | • | Maintains social, ethical, organizational norms in job-related activities. |
| SELF-STARTING | • | Active efforts to influence events and keep oneself involved in productive activity. |
| COOPERATION | • | Working as a team member to ensure that team goals are accomplished; deference to team goals over individual activities. |
| COMMUNICATIVENESS | • | Transmits information and actively participates in the information exchange of the plant. |
| OPENNESS | • | Genuineness in dealing with others; willingness to relate openly to others and meet interpersonal conflict as a mature adult. |
| TACT/SENSITIVITY | • | Aware of, responsive to the impact of his behavior on the feelings, dignity, and performance of others. |

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Industrial Controls Division

Type of Program: Communications and Survey Feedback
Date Program Initiated: February 1978
Company Units: 10 Divisions in 7 States and Canada
Number of Employees Involved: 1,950 have been surveyed
Worker Classification: Union and Non-union, Exempt and Non-exempt
Structural Characteristics:
Technology -- Manufacturing; unit
Size -- Small to Medium;
Degree of Centralization -- Decentralized
Organizational Climate: Primarily Consultative

## Company Background

Bendix Corporation has 60 divisions in three business groups: automotive, aerospace-electronics and industrial-energy. Some of their products include auto brake and steering systems, fuel injection units, air and oil filters, aircraft landing gear, missile guidance systems, various aerospace instruments and controls and a wide variety of manufacturing precision tools, equipment and systems.

Net sales in 1980 were $3,861.7 million and net income totaled $191.6 million. Bendix employs approximately 74,500 individuals world-wide. Several divisions are unionized. The major organizing unions are the UAW, IAM, Teamsters, IBEW, and CWA.

## History and Development of the Program

During 1977, there was a union organizing attempt in the automotive division of Bendix. These activities highlighted the need for better communication between management and hourly employees. While examining issues prompting the organization effort, management discovered the critical need for a mechanism through which employees could voice their concerns.

The President of the automotive group turned for assistance to the Corporate Vice President in charge of Personnel. In response, the corporate

staff began to explore alternatives. Such informal techniques as rap sessions, hot lines, and committee meetings were suggested for partial resolution. However, it was felt that a more confidential and anonymous method of communicating was necessary. A survey feedback program was the primary technique selected by the corporate staff.

There were important considerations influencing this decision. Approximately a year earlier, Bendix had contracted with an outside consulting firm to survey a sizable percentage of the corporation regarding communication patterns. The experience was not a positive one. The survey had been mailed to employees' homes and employees completed and returned them by mail. Results of the survey were never reported to employees involved, but a report had been prepared for corporate management. The report had no impact and stimulated no communication changes. This experience, along with social science research supporting the benefits of survey data feedback to employees, convinced the corporate staff of the importance of the data feedback process.

Thus, in February 1978, Bendix made an Employee Survey Data Feedback Program available to the automotive group and any other interested divisions. The primary survey instrument used by Bendix is the Survey of Organizations (SOO) developed by the Institute for Social Research (ISR) at the University of Michigan. This survey was selected because it consists of questions statistically tested for reliability and validity and also because over 100,000 people in various industries have taken the survey, thus furnishing norms with which to compare Bendix survey results. The survey measures a broad spectrum of attitudes including decision making, communication flow, technological readiness, supervisory skills, peer relations, pay satisfaction, work environment satisfaction, etc. Every item (or question) of the survey is answered on a 5-point scale, with 1 and 5 representing opposite ends of a continuum.

## Description of the Program

The emphasis of this case study is on the formal survey feedback process utilized by Bendix. However other successful communication techniques and strategies are also described.

### Employee Survey Data Feedback Program

The survey feedback program at the division level originates with division management. Perhaps the most crucial stage of the feedback process is that of gaining management understanding and commitment. When a division indicates the desire for organization development activity, two corporate staff consultants visit to brief local management concerning the process, benefits, and costs of the Employee Survey Data Feedback Process. The corporate consultants also use this opportunity to learn the needs and concerns of the division. Following this exploratory meeting, if management is willing to fully support the survey feedback activities (including time and resources), the program is begun. If management is not completely

committed to the process, or if some management ulterior motive is perceived by the corporate staff members, the survey feedback program is not pursued.

At this point, division management explains to their employees that there will be a survey, what the process will be, and that the results will be used by management and employees themselves for action-planning purposes. Participants are told of the survey through a variety of means, including written memos or supervisory briefings. The program is promoted as a confidential way to express attitudes and become actively involved in improving all aspects of their work environment. All responses are guaranteed to remain anonymous. Employee participation in the survey feedback process is entirely voluntary.

The second stage of the survey feedback process involves the development of a supplemental questionnaire. A sample of approximately 10 percent of division employees is typically selected by the division's Director of Employee Relations. This sample is representative of the division, cutting across all departments, position levels, ages, and sexes. The sample employees are interviewed by the corporate consultants who ask open-ended questions to allow maximum communication of concerns. Responses to the interviews are analyzed by the corporate team and questions involving areas of frequent concern are included in the survey. In this manner the survey is tailored to the needs of each individual division. A few areas which have been addressed by supplemental questions are benefits, EEO issues, physical layout, management effectiveness, and quality control.

When development of the supplemental questionnaire is complete, the survey is administered by the corporate team. Actual administration takes from one to two hours and usually occurs in a large room (such as the cafeteria) which accommodates many people. Administration sessions have ranged in size from 10 to 80 participants, depending upon room facilities and scheduling preference of each division. Surveys are identified with supervisory code numbers. A work group is composed of a supervisor and all his/her subordinates (from 4 to 80 employees). Each supervisor is assigned a number. When taking the survey, each employee places his/her supervisor's code number on it. Use of this number for identification purposes assures individual anonymity and confidentiality of the work group data.

Completed surveys are sent to the University of Michigan for data processing and analysis. The analysis process takes six weeks and yields several results. First, the mean score for each item of the survey is provided. These means are then compared to those of three different norm groups: the functional area in which the work group operates (i.e. sales/marketing, manufacturing, engineering, management); all individuals who have ever taken the survey; and other individual work groups in the division. These comparisons provide a great deal of information concerning each work group.

Several division employees are selected to function as internal facilitators for the actual data feedback process. The number of facilitators has ranged from 3 to 10, depending upon the size of the division, number of work groups, and the amount of time individual facilitators are available to

perform this role. Individuals selected to be trained as facilitators must meet three criteria. They must be able to maintain confidentiality of information, possess good interpersonal skills, and be perceived as trustworthy and credible by fellow employees. Internal facilitators for Bendix are usually, though not always, supervisory personnel. These employees complete a week-long seminar conducted by ISR in which they learn to interpret survey data and learn interpersonal skills necessary to prepare supervisors for data feedback sessions.

When the data have been analyzed, the data feedback sessions begin. The feedback process always begins with top management, which includes the general manager and directors. This group receives two sets of data. Each individual receives the results for his/her own work group and the results for his/her function. The managers thoroughly review their data and problem-solve before data are given to other groups. In this manner, top management learns what problems exist in their areas and employees see behavioral evidence of top management commitment to the survey feedback process. When feedback to all employees is completed, this top group receives the survey data for the entire division by level across all functions. Feedback sessions to top management are always conducted by outside consultants.

The feedback method employed by Bendix consists of reviewing survey results with supervisors and assisting them in feeding back the data to their work groups. Every supervisor is supplied with a workbook in which to plot each question's mean score and produce a profile of his/her work group. The trained internal facilitators and corporate consultants work with each supervisor individually to help identify the strengths, weaknesses, and concerns of his/her work group. Facilitators role play with the supervisors to prepare them for questions and situations which may arise in feedback sessions. This is an important process since very sensitive issues often emerge and supervisors need to respond constructively.

After each supervisor has reviewed his/her group's survey data and worked with a facilitator, he/she meets with the work group. At this time the supervisor presents the group's survey results and facilitates the group as they identify problems and brainstorm solutions. Each group develops a list of action items in order of priority and sets target dates for completing each item. Examples of action items which have been developed include planning regular work group meetings or rap sessions, using planned agendas for more effective meetings, and clearly defining roles within the group.

When each work group has completed the data feedback session with the supervisor, the formal Employee Survey Data Feedback Process is complete. However, meetings to address the identified problems continue throughout the year until the problems are resolved. Some divisions handle these issues through regular staff meetings. Others have special work group meetings, task forces, etc.

In divisions which are organized, unions have been involved in all survey activities to varying degrees. They have been involved in the initial

briefings and implementation decisions. Union members have been included among those 10 percent interviewed for supplemental question development and questions regarding the unions have been included in the supplemental questionnaire. Finally, organized employees have taken the survey and participated in the data feedback sessions.

The cost of the survey feedback program is viewed in terms of both time and money. A minimum of 8 hours and up to 12 hours is required for supervisory personnel to review their data and prepare for feedback sessions. In addition, the week of training is necessary for internal facilitators, and there is a time commitment for actual survey administration. Monetarily, Bendix spends $16 per person for the process. This figure includes the actual survey instrument for each employee, all data processing, supervisory workbooks, and a final diagnostic report for the division. The cost of training facilitators is $250 per person plus expenses. Any consulting fees are an additional charge.

Other Communication Programs

Bendix has several other employee communication techniques. One of the most extensive of these techniques is the Performance Planning and Review and MBO program. Every salaried employee receives an annual performance appraisal. Performance is evaluated according to the progess that has been made toward written objectives that are mutually established by the employee and supervisor. Supervisors receive at least eight hours of training in conducting appraisals and are evaluated, in part, on the quality of the reviews given to their subordinates. Employees participate actively in this process through self-evaluation and their contribution toward establishing goals. An overall performance rating is given in the annual appraisal of "outstanding", "exceeds requirements", "meets requirements", "below requirements", or "unsatisfactory." The rater's supervisor signs the final appraisal to ensure a fair and equitable review.

Another program which Bendix uses to promote open, systematic communication is its career counseling program for exempt employees. Supervisors attend workshops to learn career counseling skills in problem-solving, planning, goal setting, assessing their performance and situation, establishing priorities and adopting sound managerial practices. In this program individuals identify their short and long-term objectives as well as their own strengths and weaknesses. Management discusses these areas with their employees and informs them of career options and paths, as well as educational and experiential requirements of positions. In some divisions career counseling is handled as part of the performance planning and review sessions. In other divisions, career counseling is viewed as a major effort in itself and the counseling meetings between supervisor and subordinate often occur off-site.

In addition to these employee involvement efforts, Bendix has an active corporate-wide suggestion system which has yielded significant benefits. There are also a number of less formal communication activities including mini-meetings held quarterly in some divisions. In these mini-meetings the general manager shares with hourly employees key operating statistics, the

financial plan for the quarter and how the division performed with respect to the preceeding quarterly plan. In some divisions there are rap sessions, hot lines, and various committees serving a variety of communication purposes.

## Problems

Several problems have been encountered in the survey feedback program. First, some managers have been reluctant to support the large time investment necessary to the program's success. Responding to this problem, the corporate team devotes extra time and effort to explaining what information management will receive, how the information can be utilized, and how to reap benefits from the process. Extra emphasis on these points is required both in the initial briefing sessions and throughout the entire survey feedback process.

A second problem has emerged in every division at the time of survey administration. Even though confidentiality of data and individual anonymity are assured, much skepticism remains at administration sessions. The previous employee survey is often negatively referenced. In order to handle this, the beginning of each administration session is devoted to eliciting employee concerns and reassuring everyone of the confidential and anonymous nature of the survey. The entire data gathering/analysis/feedback process is again explained in great detail at this time. These additional efforts have helped significantly reduce employee doubts.

Another fact which has emerged both in the data feedback process and in the performance review program, is that supervisors experience much anxiety in being candid with their subordinates while discussing survey results or performance. Bendix has responded to this by training supervisors in how to interact when situations are negative or potentially explosive.

A final and related problem has been individual resistance to negative survey data. Some supervisors find it difficult to accept the fact that responses to the survey show their employees feel negatively toward them or aspects of management. Employees also experience anxiety when the data reveal problems within the work group. This resistance is dealt with through extra assistance in preparing supervisors for data feedback sessions.

## Results

The corporate consulting team has made some insightful observations within the divisions with regard to communication in the work setting. First, while interviewing employees on all different levels, the performance and review process was discussed. Nearly everyone has been positive about receiving feedback concerning their performance and approximately 70 percent of those interviewed have talked about wanting and needing more negative and constructive feedback which would help them improve their performance. Hence, the power of feedback has become quite apparent.

A key observation is that first-line supervision is crucial to successful communication and high quality of work life. This level of management is the link between hourly workers and upper management and the corporation.

This group of managers represents "the company" to the hourly workers. Therefore the image they present is exceedingly important to the success of any communication program.

Finally, concepts of employee motivation held by management have been recognized as important factors in productivity and communication. Authoritative managers who hold that money is the prime motivator negatively impact employees. This has been evidenced in situations where shift management is rotated and hourly workers maintain their usual assignments. Productivity and peer interactions deteriorate under the influence of authoritative managers, while the reverse is true with participative managers.

Bendix plans to resurvey divisions participating in the Employee Survey Data Feedback Process to gain data for comparative purposes. These second surveys will be administered 12 to 18 months after the first administration, however that time period has just elapsed and no comparative data is available at this time. Key operating statistics which will be used as criteria for success include absenteeism, turnover, safety, grievances, scrap rates, losses, errors and defects, customer complaints, EEO complaints, OSHA citations, requests for transfers, output per hour, etc. Quality of work life dimensions which will be measured include job satisfaction, peer relations, supervisory skills, pay satisfaction, work environment satisfaction, etc.

Bendix can, however, report some preliminary results from several divisions since their participation in the survey feedback process. One division reduced cost of sales by 27 percent over a five-month period. Another reduced its turnover rate by approximately 11 percent and absenteeism by about 30 percent in a period of eight months. Still another division reduced its scrap rate 68 percent over a six-month time span after the survey feedback process.

During the fiscal year of 1979 the corporation realized a total net savings from its suggestion program of almost $1,443,000 across all divisions. This was an average net savings per 100 employees of $6100. This is slightly higher than the 1978 national average reported by N.A.S.S. of $5035 net savings per 100 eligible employees.

Since Bendix is involved in several productivity and quality of work life improvement efforts, it is not possible to attribute improved performance and satisfaction to any one effort. Thus the corporation remains committed to all their programs.

10/01/81



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## TEST YOUR PRODUCTIVITY/QUALITY OF WORK LIFE AWARENESS

1. What is productivity improvement?

   A. Producing quality goods and services
   B. Increasing profits from production
   C. Getting more outputs for your inputs
   D. Reducing the Consumer Price Index
   E. Using more machines and fewer people

2. What is the relationship between productivity and quality of work life?

   A. Productivity can affect quality of work life
   B. Quality of work life can affect productivity
   C. Improved productivity can have an adverse effect on quality of work life
   D. Poor quality of work life can have an adverse effect on productivity
   E. All of the above

3. The most productive nation today (domestic output per employee hour) among the world's major industrial powers is:

   A. France
   B. Japan
   C. United Kingdom
   D. West Germany
   E. United States

4. Which of the following countries has had the lowest productivity growth rate (% of growth) over the past decade?

   A. Canada
   B. United States
   C. Italy
   D. United Kingdom
   E. France

5. The recent slowdown in the U.S. productivity growth rate is attributed to:

   A. Declining R&D expenditures
   B. Government regulations
   C. Reduced investment
   D. Work disincentives
   E. All of the above



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6. The estimated percentage of workers in service or service-related jobs by the mid-1980's is:

   A. 40%
   B. 50%
   C. 60%
   D. 70%
   E. 80%

7. In a National Commission on Productivity survey, a majority of people agreed with all of the following statements except:

   A. Higher productivity means higher company profits
   B. Companies benefit from improved productivity at the expense of workers
   C. Increased productivity means higher pay to workers
   D. To increase productivity, people have to work much harder
   E. Increased productivity equals higher unemployment

8. What benefit(s) can your organization derive from improving its productivity and quality of work life?

   A. Increased profits
   B. Improved competitive position
   C. Improved employee satisfaction
   D. Growth
   E. All of the above

Answers

| | |
|---|---|
| 1 - C | 5 - E |
| 2 - E | 6 - E |
| 3 - E | 7 - C |
| 4 - B | 8 - E |



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Subsection 1.3 Review internal and external sources of information

I. Internal Sources

A. Employee Handbooks

B. Company Newsletters

C. Brochures

D. Posters

E. Small group meetings

II. External Sources

A. Public seminars/workshops

B. Customized training programs

C. TV and radio spots

D. Speeches and lectures

E. Newspaper and magazine articles

This subsection is designed to make participants aware of the various sources of informations. Participants are asked to share any sources that are used in their organizations. The facilitator will have on file numerous examples of sources of information.

## MODULE II - PLANNING AND ANALYSIS

### Overview

I. Why planning and analysis?

A. The intention of this phase is to prevent the productivity improvement effort from becoming another "program," or from not really being consistent with the mission, goals, and operating philosophies of the organization

1. An opportunity to incorporate productivity into the philosophy and character of the organization

2. Avoid "false starts" from adopting rather than adapting techniques

B. Productivity planning needs to begin early and proceed carefully

1. Productivity is not a discipline in the business world today

2. Most top managers lack hands-on experience with productivity improvement

3. Often organizations try to attain too much too soon

II. Planning and analysis usually involves top management

1. CEO/COO

2. Executive Committee or Top Management Team

3. Productivity Coordinator

4. Facilitator or consultant

III. Issues to be addressed during the planning and analysis phase

A. How will you define productivity?

B. How does productivity relate to the organization's objectives?

C. To whom in the organization does productivity and quality of work life apply?

D. Is productivity an implicit or explicit managerial responsibility?

E. What is the organization's track record in productivity and quality of work life?

F. How are productivity and quality of work life integrated into your business plan, budget, and performance appraisal system?

G. What are your best leverage points for improvement?

H. What must be done now to provide a long-term perspective?

IV. The outcome of the planning and analysis phase is a sound framework and structure for your improvement efforts

1. Top management commitment that is visibly communicated and demonstrated

2. A written policy or position on productivity and quality of work life that reflects top management's views; the philosophy and character of the company

3. A long-term strategy for productivity improvement

Subsection 2.1 - Define and Relate Productivity To Your Organization

I. Definitions of productivity

A. "Working Smarter, not harder"

B. "Getting more out of what you put in"

II. Relations of Productivity

A. Measurement

1. Utilization of sources

2. What to measure

3. Partial measures

B. Communication of information

1. Methods currently in use

2. Changes that can be made

C. Management Myths

1. Employees don't want to know

2. Decision-making myth

3. Cost/Benefit myth

4. Quality myth

5. People development myth

Supplemental Materials:

1. "Some Productivity Questions - Points To Help You Get Started"

2. "Recognizing Productivity Problems"

3. Productivity Program Charter and Organization - Sample

## SOME PRODUCTIVITY QUESTIONS -- POINTS TO HELP YOU GET STARTED

1. Things seem to be going fine in my company. How do I know whether or not I have a productivity problem?
2. How can I be sure that productivity improvements made in one department are not counterproductive to the efforts of other departments or the company as a whole?
3. How do I keep my productivity program from being perceived as just another "Corporate" program?
4. How should our productivity program be structured to be most effective?
5. Who should be in charge of productivity improvement?
6. How do I find out how other companies tackle productivity improvement?
7. What are other companies like mine doing to improve productivity?
8. How can I be sure that a productivity program is right for us?
9. How do you instill a positive attitude towards productivity improvement throughout the entire organization?
10. How do you handle productivity communications?
11. How do we get our top management involved in a productivity improvement program?
12. How precise should our productivity measures be?
13. What are the 10 most important points I should consider in organizing a productivity program?
14. How do we get the employees involved in our productivity improvement program?
15. How do you get the commitment and support of the first line supervisors and foremen?
16. What do first line supervisors and foremen need to know so they can effectively communicate with their employees?
17. How can I spot productivity problems early so that action can be taken before it's too late?
18. How do I convince management that we ought to have a productivity improvement program when business is so good?



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19. What are the problems and pitfalls other companies have experienced in starting a productivity improvement program?

20. How should organized labor and management work together when starting a productivity program?

21. How do we coordinate productivity communications with other line and staff efforts to change work habits and attitudes of not only the employees, but managers and staffers as well?

22. What's the minimum acceptable productivity rate for a division? department? employee?

23. How should productivity improvement be woven into annual planning?

## RECOGNIZING PRODUCTIVITY PROBLEMS

1. Over (under) staffed organization.
2. Company is not people oriented.
3. The management/leadership of the company is not respected by the employees.
4. There is no esprit de corps in the company. There is not a common theme or cause which seems to draw everybody together.
5. Workers feel their employers benefit from increased productivity at the expense of the workers.
6. Some employees feel that hard work no longer pays off.
7. The company's background of employee and labor relations is such that an attempt to organize a productivity improvement program would be viewed negatively by the employees.
8. The company has a fairly low standing on "hygiene" factors.
9. The workforce is predominantly older, generally undereducated, and possesses a less than desirable level of technical skills.
10. Companies get so "hung up" trying to define and measure productivity that they never get around to doing anything about the improvements.
11. Productivity improvement is viewed as "speed up, work harder, work faster, lay off people, job insecurity, etc."
12. Administration or coordination of the program is improperly located in the organization.
13. The productivity coordinator does not have the genuine backing and support of top management.
14. People don't have time to work on productivity improvement because of the demands of their primary job.
15. There is an emphasis on productivity within the organization, but no tie to employee self-interest.
16. People influenced by the productivity program:
    - o Do not understand its purpose
    - o Do not agree with its aim



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- o Cannot influence it
- o Do not receive timely feedback on its progress
- o Do not feel they belong to the organization

17. Some people believe their jobs are not subject to productivity measurement because they are supervisors, or they feel that their job is too "creative" to measure.

SAMPLE

## PRODUCTIVITY PROGRAM CHARTER AND ORGANIZATION

### Company Position

A viable, visable, disciplined and organized approach to productivity improvement in all areas and levels of company operations is desirable and necessary towards the accomplishment of profit, return on assets and growth goals.

### Organization and Responsibility

Primary responsibility for productivity improvement rests with responsible top line executives and the leaders of key staff organizations. Unit/Division/Plant Managers are responsible for ensuring that an organized and disciplined program supported by goals, objectives and measures is in effect within their respective units.

### Policy Body

The Productivity Steering Committee, comprised of key line and staff executives, is an independent forum for periodically reviewing the company position and policy on productivity improvement. The Committee has the latitude to address any area of productivity, whether it be labor, capital, materials, energy or systems at any level within any component, division or group of the company. The Committee, with the approval of the President and Chief Executive Officer, has the authority to direct the implementation of changes or revision to the company Productivity Improvement Program.

The primary role of the Productivity Steering Committee is twofold:

1. Serve as a forum for exchanging ideas and getting programs going.

2. Monitor company policy to ensure that changes are not counterproductive in the long run, and do not have a negative impact on productivity.